# Cost 101 for Life Cycle Logisticians

R&D + Procurement = Acquisition Cost

Acquisition + O&S + Disposal = Life Cycle Cost (LCC)

Life Cycle (LCC) + cost of DoD business = Total Ownership Cost (TOC)

## Cost Calcs

**R&D Cost:** program costs primarily associated with the development of a new or improved capability to the point where it is appropriate for operational use

**Procurement Cost:** sum of the cost for prime mission equipment, the procurement cost for support items, and the initial spares

**Operating and Support Cost (aka Sustainment Cost):** sum of the costs to operate, maintain, support and update a system.

**Total Ownership Cost:** sum of the costs to research, develop, acquire, own, operate, and dispose of weapon and support systems, other equipment and real property, the costs to recruit, train, retain, separate and otherwise support military and civilian personnel, and other cost of business operations in DoD.

## O&S Terms

**Operating and Support Phase:** The fifth phase of the life cycle as defined and established by DoDI 5000.02 after Materiel Solution Analysis (MSA), Technology Development (TD), Engineering and Manufacturing Development (EMD), and Production and Deployment (P&D). This phase consists of two efforts, Life Cycle Sustainment and Disposal. The phase is not initiated by a formal milestone, but instead begins with the deployment of the first system to the field; an act that initiates the Life Cycle Sustainment effort of this phase. The Life Cycle Sustainment effort overlaps the Production and Deployment (P&D) effort of the P&D phase.

**Operating and Support Cost:** All direct and indirect costs incurred from initial deployment and fielding of an acquisition item or program through the end of the acquisition item's or program's operational and support activities. These operational and support activities are not bound to a life cycle phase or appropriation category.

**Operating and Support Cost Elements:** categories of O&S costs as defined by OSD CAPE in guidance. Top level categories are Unit-level Manpower, Unit Operations, Maintenance, Sustaining Support, Continuing System Improvements, and Indirects.

**Operations and Maintenance (O&M) Appropriation:** Congressional appropriation category to finance expenses not related to military personnel or RDT&E. Examples of expenses funded with O&M include day-to-day operations, HQ operations, civilian salaries, travel, fuel, minor construction, training and education, base operations support, recruiting, etc.

## Will vs Should

**Will Cost:** Life Cycle Cost Estimates (LCCEs) of what an acquisition program will cost based upon reasonable extrapolations from historical experience and other recognized cost estimating techniques to support budgeting and programming.

**Should Cost:** An attempt to drive productivity improvement during contract negotiation and program execution by scrutinizing every element of program cost, assessing whether each element can be reduced relative to the year before, challenging learning curves, dissecting overheads and indirect costs, and targeting cost reduction with profit incentive.

definitions sourced from DAU glossary

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## PAUC/APUC

**PAUC**: Program Acquisition Unit Cost

$$PAUC = \frac{Program\ Acquisition\ Cost}{Program\ Acquisition\ Quantity}$$

**APUC**: Average Procurement Unit Cost

$$APUC = \frac{Total\ Procurement\ Cost}{Number\ of\ Systems\ Being\ Procured}$$

## Savings/Avoidance

**Cost Savings:** An action that will result in a smaller-than-projected level of costs to achieve a specific objective.

**Cost Avoidance:** An action taken in the immediate time frame that will decrease costs in the future.

**Usually, cost savings happens when you have already programmed the money and you no longer need it. Cost avoidance occurs when an action no longer requires funds to be programmed.**

## Cost Estimating $

**Constant (Base) Year Dollars:** A method of relating dollars from several different Fiscal Years (FYs) by removing the effects of inflation and showing all dollars at the value they would have in a selected Base Year (BY). O&S estimates are conducted in BY$.

**Then-Year Dollars (TY):** Dollars that include the effects of inflation or escalation and/or reflect the price levels expected to prevail during the year at issue. Budgets are always in TY$.

| | USA | USAF | USN |
|---|---|---|---|
| Constant Year | BY$ | BY$ | FY$ or CY$ |
| Then Year | TY$ | TY$ | TY$ |

## Investment Terms

**Return on Investment (ROI):** the incremental gain from an investment, divided by the cost of the investment.

$$ROI = \frac{NPV}{PV\ Investment}$$

**Present Value:** the time value of money. Present value is calculated from the time series of constant dollars estimates, using the real discount rate as specified by OMB policy.

**Net Present Value (NPV):** a project's net contribution to wealth

$$NPV = PV\ - Initial\ Investment$$

**BCA and CBA Costs should be shown in terms of PV, NPV, and ROI to compare between alternatives.**